

September 19, 2017

**BY ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

Re: *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, IB Docket No. 16-408*

Dear Ms. Dortch:

This is to inform you that, on September 18, 2017, Patricia Cooper (by phone) and undersigned counsel of Space Exploration Technologies Corp. (“SpaceX”) met separately with Erin McGrath, Legal Advisor to Commissioner O’Rielly; Daudeline Meme, Legal Advisor to Commissioner Clyburn; and Kevin Holmes, Acting Legal Advisor to Commissioner Carr, to discuss the certain aspects of the draft order in the above referenced proceeding on the rules and policies governing non-geostationary satellite orbit (“NGSO”), Fixed-Satellite Service (“FSS”) systems.<sup>1</sup> The presentation and discussion were consistent with SpaceX’s prior meetings on this subject,<sup>2</sup> in which SpaceX thanked the Commission for moving forward on NGSO issues so diligently, expressed its support for virtually all of the updates to Parts 5 and 25 as adopted in the *Draft R&O*.

We also discussed the basis for SpaceX’s proposal that the Commission add a second topic to the further notice of proposed rulemaking, under which it would propose to define in-line events for uplink transmissions as 25%  $\Delta T/T$ , which must be satisfied at an angle of no more than 10°. This goes to the very heart of the one issue on which all commenters in this proceeding agree – namely, that the Commission should adopt rules that avoid the need for spectrum splitting if at all possible. Requesting comment on SpaceX’s proposal would allow interested parties to augment the record with respect to an issue already raised in the initial notice of proposed rulemaking that should be addressed for the benefit of all NGSO operators and in furtherance of the Commission’s own commitment to maximizing spectrum efficiency.

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<sup>1</sup> See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, FCC-CIRC1709-04, public draft Report and Order and Further Notice of Proposed Rulemaking (“*Draft R&O*”), available at <https://www.fcc.gov/document/non-geostationary-satellites-order>.

<sup>2</sup> See, e.g., Letter from William M. Wiltshire to Marlene H. Dortch, IB Docket No. 16-408 (Sep. 16, 2017) (discussing meeting with Rachael Bender). The materials attached hereto were provided during all three meetings.

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The discussions with Erin McGrath also specifically addressed assertions made by Telesat Canada that any  $\Delta T/T$  regime for defining in-line events would be unworkable because NGSO operators would not be able to exchange the relevant information and adjust their operations in real time.<sup>3</sup> In SpaceX's view, Telesat's assertions significantly overcomplicate the process of implementing the  $\Delta T/T$  rules. While parties may be free to choose a more complex approach, NGSO operators could also avoid these challenges by using the characteristics of their respective systems to derive in advance a separation angle that is sufficient to meet the desired protection criteria to the satisfaction of both sides. Then, to implement this arrangement, the operators would only need to know the ephemeris data (providing the location of each satellite) and the agreed-upon separation angle to identify potential in-line events. (If, as SpaceX has proposed, the parties also exchange beam pointing information, this analysis could be improved by eliminating false in-line events.) Thus, while one could imagine approaches to the  $\Delta T/T$  regime that could be challenging to implement, operators would likely adopt simpler approaches, especially if the Commission adopts its proposal to impose an obligation upon NGSO operators to coordinate in good faith.<sup>4</sup>

Respectfully submitted,



William M. Wiltshire  
Paul J. Caritj  
*Counsel to SpaceX*

Attachments

cc: Erin McGrath  
Daudeline Meme  
Kevin Holmes

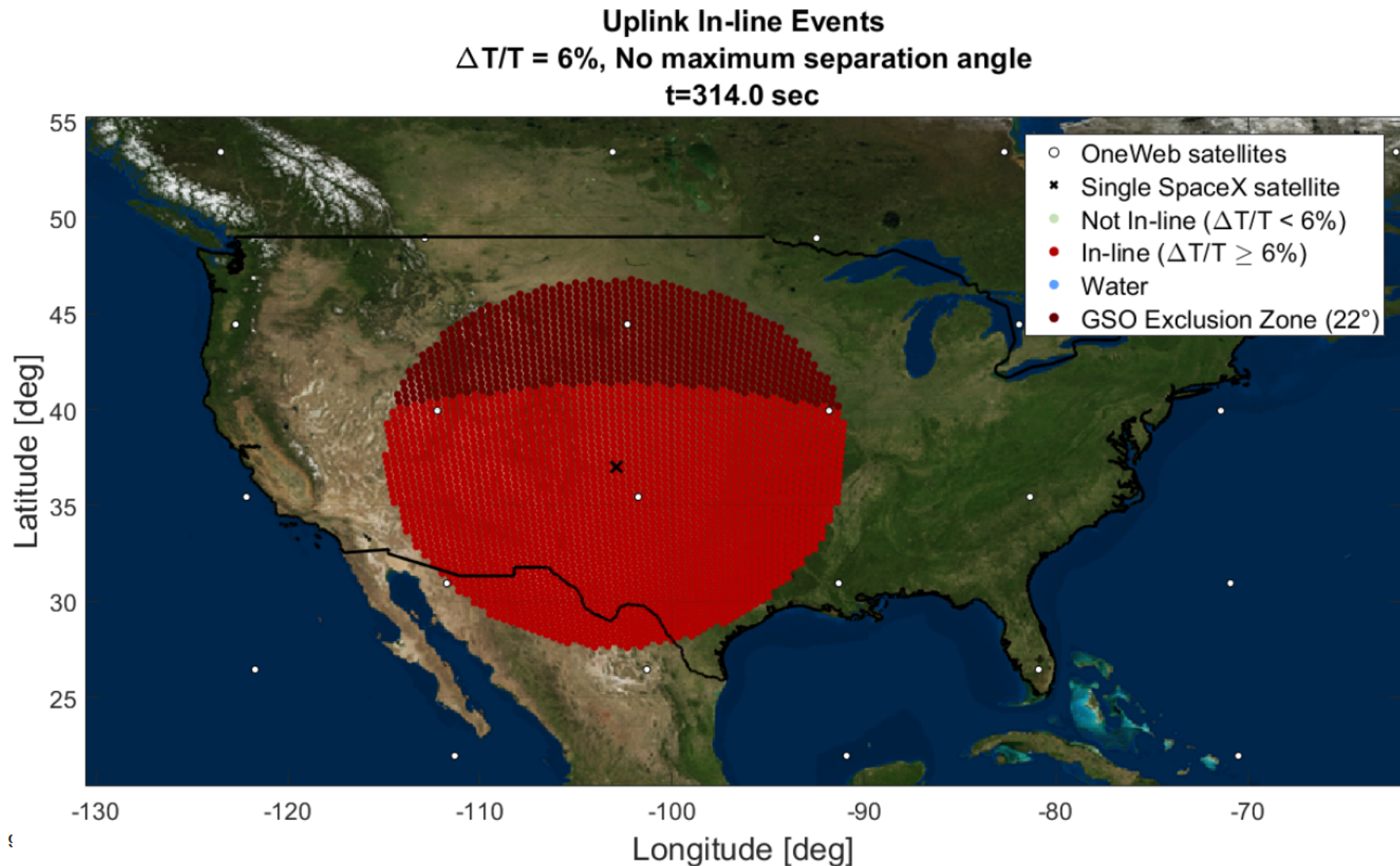
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<sup>3</sup> See, e.g., Letter from Henry Goldberg to Jose P. Albuquerque (Sep. 13, 2017).

<sup>4</sup> See *Draft R&O* ¶ 49.

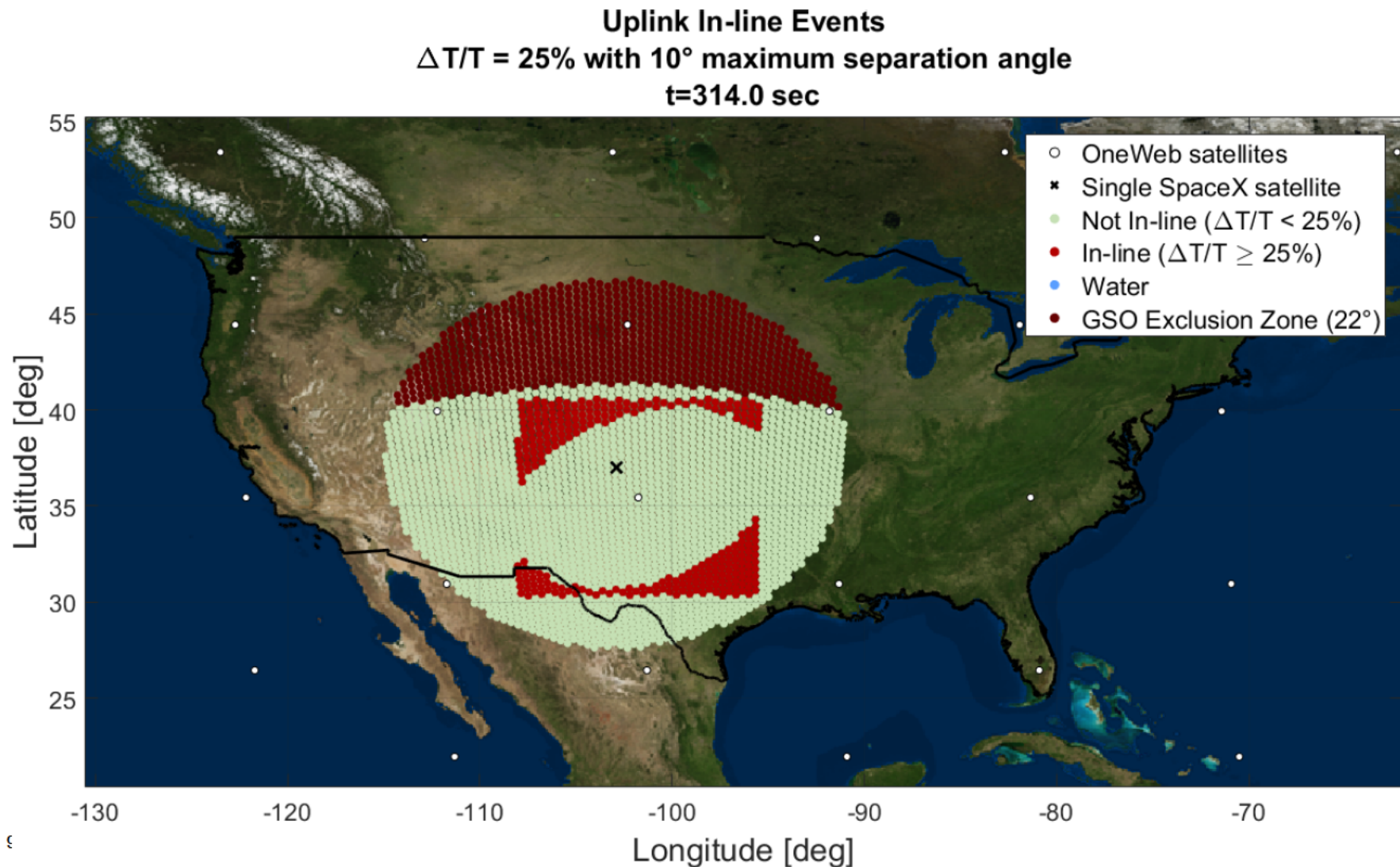
# Uplink In-line Events with OneWeb from SpaceX Point of View

$\Delta T/T=6\%$ , no maximum separation angle



# Uplink In-line Events with OneWeb from SpaceX Point of View

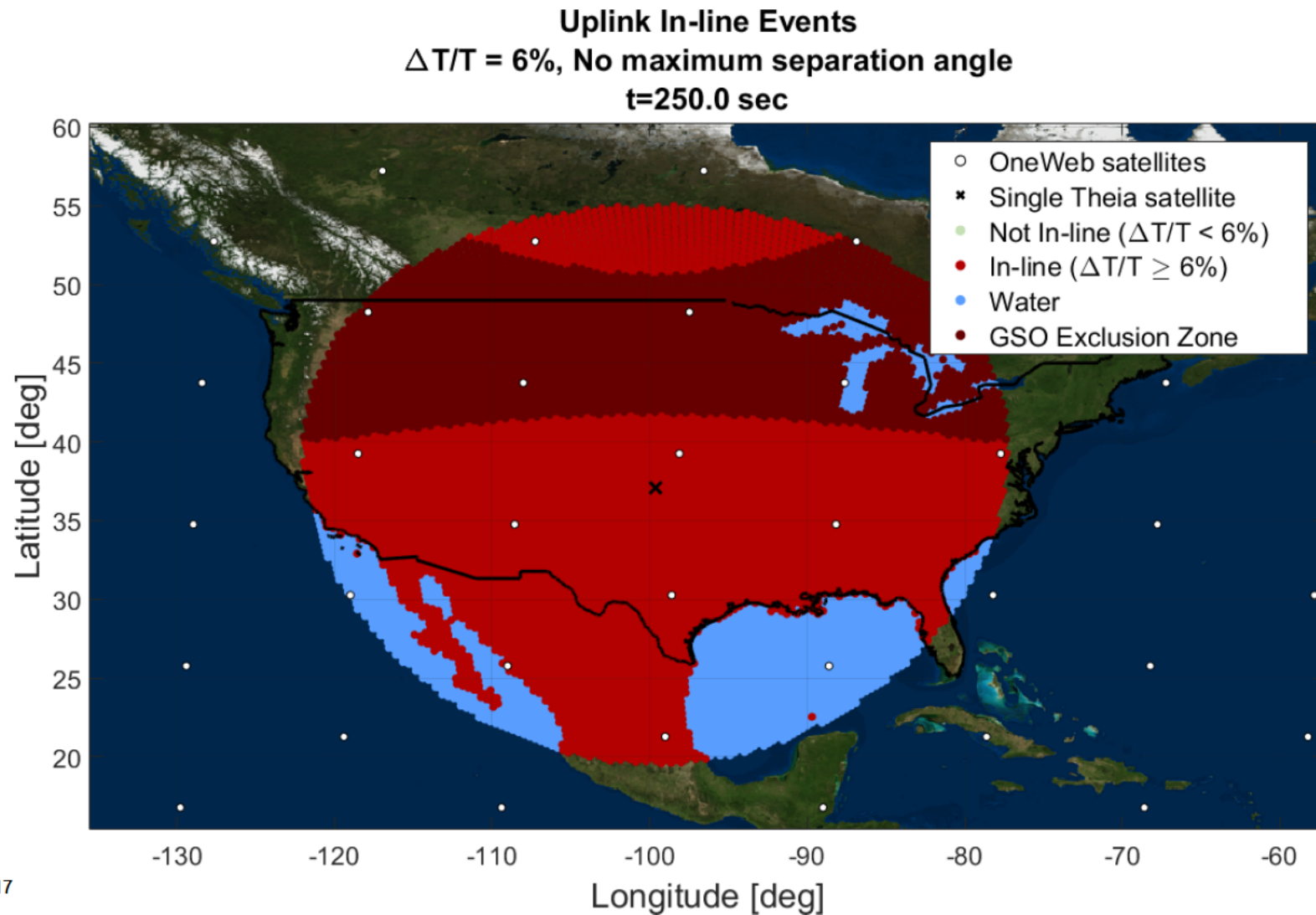
$\Delta T/T = 25\%$  with  $10^\circ$  maximum separation angle





# Uplink In-line Events with OneWeb from Theia Point of View

$\Delta T/T = 6\%$ , no maximum separation angle



# Uplink In-line Events with OneWeb from Theia Point of View

$\Delta T/T = 25\%$  with  $10^\circ$  maximum separation angle

